



15:39

From-KATTEN MUCHIN ROSENMAN 13129021061

+3125774532

T-624 P.02/04 F-448

Complete and send this form, together with applicable fee(s), to: **Mail**

**Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**  
**or Fax (571)-273-2885**

**INSTRUCTIONS:** This form should be used for transmitting the **ISSUE FEE** and **PUBLICATION FEE** (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees, will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

27160

7590

01/30/2007

**PATENT ADMINISTRATOR**  
**KATTEN MUCHIN ROSENMAN LLP**  
**1025 THOMAS JEFFERSON STREET, N.W.**  
**EAST LOBBY, SUITE 700**  
**WASHINGTON, DC 20007-5201**

04/03/2007 RUSHANE 00000005 501214 10727473

01 FC:1501 1400.00 DA

02 FT:8001 30.00 DA

**Certificate of Mailing or Transmission**  
 I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

Anna M. Franz (Depositor's name)  
 (Signature)  
 April 2, 2007 (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,473	12/04/2003	Stephen John Brosnan	211467-00246	6262

TITLE OF INVENTION: WAVEFRONT SENSOR USING HYBRID OPTICAL/ELECTRONIC HETERODYNE TECHNIQUES

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$0	\$0	\$1400	04/30/2007

EXAMINER	ART UNIT	CLASS-SUBCLASS
CONNOLLY, PATRICK J	2877	356-484000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed

Karren Muchin Rosenman  
 LLP  
 3 John S. Paniaguas

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Northrop Grumman Corporation

Los Angeles, CA 90067-2199

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☒ Issue Fee☐ Publication Fee (No small entity discount permitted)☒ Advance Order - # of Copies 10

4b. Payment of Fee(s). (Please first reapply any previously paid issue fee shown above)

☐ A check is enclosed.☐ Payment by credit card. Form PTO-2038 is attached.☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 50-1214. (enclose an extra copy of this form)

5. Change in Entity Status (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant, a registered attorney or agent, or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature

John S. Paniaguas

Date

April 2, 2007

Typed or printed name

John S. Paniaguas

Registration No.

31,051

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



15:39

From-KATTEN MUCHIN ROSENMAN 13129021061

+3125774532

T-624 P.01/04 F-448

## Katten

KattenMuchinRosenman LLP

525 W. Monroe Street  
Chicago, IL 60661-3893  
312.902.5200 tel  
312.902.1061 fax

### Facsimile

To	Company	Fax Number	Phone Number
1. Issue Fee	USPTO	571-273-2885	571-272-6753
Date	Client/Matter Number		
April 2, 2007	211467-00246		
From	Attorney Number		
Anna M. Franz	41463		
Phone	Fax		
312.577.8223	312.577.8769		
Total number of pages, including cover letter: 4			
If you do not receive all of the pages, please call: 312.902.5200			

#### Comments

Re: Patent Application No.: 10/727,473

Filing Date: December 4, 2003

Inventor: Stephen J. Brosnan

Title: WAVEFRONT SENSOR USING HYBRID OPTICAL/ELECTRONIC HETERODYNE TECHNIQUES

#### Please file the attached:

Issue Fee Transmittal (1 p.)

Transmittal Form (1 p.)

Fee Transmittal (1 p.)

#### CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to the USPTO addressed to Mail Stop Issue Fee for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on April 2, 2007.

Anna M. Franz

(Typed or printed name of person signing this certificate)

Signature

#### For Messenger Department Use Only

Your fax has been sent. Attached is your original.

Date

Time

Signature

#### Important

This facsimile transmission contains information intended for the exclusive use of the individual or entity to whom it is addressed and may contain information that is proprietary, privileged, confidential and/or exempt from disclosure under applicable law.

If you are not the intended recipient (or an employee or agent responsible for delivering this facsimile transmission to the intended recipient), you are hereby notified that any copying, disclosure or distribution of this information may be subject to legal restriction or sanction. Please notify the sender by telephone to arrange for the return or destruction of the information and all copies.

CHICAGO CHARLOTTE IRVING LONDON LOS ANGELES NEW YORK PALO ALTO WASHINGTON, DC WWW.KATTENLAW.COM

LONDON AFFILIATE: KATTEN MUCHIN ROSENMAN CORNISH LLP

A limited liability partnership including professional corporations

CH101\_50401751\_1\_21454\_00018 2/15/2007 9:49 AM



04-02-07 4:39

From-KATTEN MUCHIN ROSENMAN 13128021061

+3125774532

T-624 P.03/04 F-448

PTO/SB/21 (09-06)

Approved for use through 03/31/2007 OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it displays a valid OMB control number.

**TRANSMITTAL  
FORM**

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number	10/727,473
Filing Date	December 4, 2003
First Named Inventor	Stephen J. Brosnan
Art Unit	2877
Examiner Name	Patrick J. Connolly
Attorney Docket Number	211467-00245

**ENCLOSURES (Check all that apply)**

<input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement  <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.62 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Issue Fee
<b>Remarks</b>		

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

Firm Name	KATTEN MUCHIN ROSENMAN LLP		
Signature			
Printed name	John S. Panagias		
Date	April 2, 2007	Reg. No.	31,051

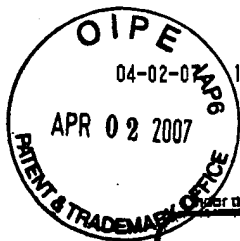
**CERTIFICATE OF TRANSMISSION/MAILING**

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature			
Typed or printed name	Anna M. Franz	Date	April 2, 2007

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2



04-02-07 15:40

From-KATTEN MUCHIN ROSENMAN 13129021061

+3125774532

T-624 P.04/04 F-448

PTO/SB/n7 (02-07)

Approved for use through 02/28/2007. OMB 0851-0032  
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE  
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.Effective on 12/08/2004.  
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818)**FEE TRANSMITTAL**  
**For FY 2007**☐ Applicant claims small entity status. See 37 CFR 1.27**TOTAL AMOUNT OF PAYMENT** (\$)**Complete if Known**

Application Number	10727,473
Filing Date	December 4, 2003
First Named Inventor	Stephen J. Brosnan
Examiner Name	Patrick J. Connolly
Art Unit	2877
Attorney Docket No.	211467-00246

**METHOD OF PAYMENT** (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): \_\_\_\_\_

☒ Deposit Account Deposit Account Number 50-1214 Deposit Account Name Katten Muchin Rosenman LI

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee

☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☐ Credit any overpayments

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

**FEE CALCULATION****1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

**2. EXCESS CLAIM FEES****Fee Description**

Each claim over 20 (including Reissues)

Fee (\$)	Small Entity Fee (\$)
50	25

Each independent claim over 3 (including Reissues)

200	100
-----	-----

Multiple dependent claims

360	180
-----	-----

Total Claims	Extra Claims	Fee (\$)	Fee Paid (\$)
--------------	--------------	----------	---------------

- 20 or HP =	x	=	
--------------	---	---	--

HP = highest number of total claims paid for, if greater than 20

Indep. Claims	Extra Claims	Fee (\$)	Fee Paid (\$)
---------------	--------------	----------	---------------

- 3 or HP =	x	=	
-------------	---	---	--

HP = highest number of independent claims paid for, if greater than 3.

**3. APPLICATION SIZE FEE**

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
--------------	--------------	--	----------	---------------

- 100 =	/ 50 =	(round up to a whole number) x	=	
---------	--------	--------------------------------	---	--

**4. OTHER FEE(S)**

Non-English Specification, \$130 fee (no small entity discount)

**Fees Paid (\$)**

Other (e.g., late filing surcharge):

**SUBMITTED BY**

Signature	<i>John S. Paniagua</i>	Registration No. (Attorney/Agent)	31,051	Telephone (312) 902-5200
Name (Print/Type)	John S. Paniagua			Date April 2, 2007

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.